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EXAMINER	
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ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/561,546	SANCHEZ, JORGE	
	Examiner	Art Unit	
	Christina Y. Leung	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,9,10,12 and 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2-4,9 and 15* is/are allowed.

6)☒ Claim(s) *1,10 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 July 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 09 July 2008. These drawings are acceptable.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Link et al.** (US 5,526,164 A) in view of **Walker** (US 5,889,802 A).

Regarding **claim 1**, Link et al. disclose a method for controlling a light emitting device in a communications system (Figure 3), comprising:

modulating a light emitting device (laser diode 2) with a test signal having a level commensurate with a noise level of the communications system ("pulsed pilot signal" f_{PILOT} as shown in Figure 3) and with data signal ("data signal" f_D) to produce a modulated optical output signal;

acquiring the modulated optical output signal from the light emitting device (using photocell 3);

extracting the test signal from the acquired modulated optical output signal (column 6, lines 44-62);

digitally processing the extracted test signal to calculate power control adjustments (column 7, lines 60-67; column 8, lines 1-14); and

controlling output power of the light emitting device by applying the calculated power control adjustments (i.e., as voltage signals U_0 and U_{mod} and corresponding current signals I_0 and I_{mod}) to the light emitting device (column 6, lines 44-67; column 7, lines 1-47).

Regarding **claim 10**, as similarly discussed above with regard to claim 1, Link et al. disclose a method for controlling output power of a laser (laser diode 2) in a communications system having a system noise (Figure 3), comprising:

embedding an original test signal having a level commensurate with the system noise ("pulsed pilot signal" f_{PILOT} as shown in Figure 3);

modulating the embedded test signal and the system noise (Link et al. disclose that the embedded test signal and the system noise is a "pulsed pilot signal" f_{PILOT}, which is modulated at a low frequency; column 3, lines 35-38);

mathematically extracting the embedded test signal from the modulated system noise (column 6, lines 44-62);

applying a digital signal processing algorithm to the extracted test signal to calculate power control adjustments from a difference between the original test signal and the extracted test signal (column 7, lines 60-67; column 8, lines 1-14); and

applying the calculated power control adjustments (i.e., as voltage signals U_0 and U_{mod} and corresponding current signals I_0 and I_{mod}) to the laser (column 6, lines 44-67; column 7, lines 1-47).

Regarding claims 1 and 10, Examiner respectfully notes that Link et al. disclose a test signal "having a level commensurate with a noise level of the communications system" at least in the sense that the disclosed test signal (i.e., "pulsed pilot signal" f_{PILOT}) has a level that is very

low compared to the level of data signal (column 3, lines 35-38), which would be well understood in the optical communications art as being similar ("commensurate") to a level that noise in the signal would have.

Further regarding claims 1 and 10, Link et al. disclose extracting the test signal from the acquired modulated optical output signal but do not specifically disclose that the digital signal processing includes a lock in detector or a linear sweep detector algorithm. However, various signal detection algorithms are known in the communications art. In particular, Walker teach a system that is related to the one disclosed by Link et al., including using a noise-level test signal to control a laser (Figure 6; column 8, lines 28-31), and Walker further teaches using lock in detection (column 8, lines 50-53). Regarding claims 1 and 10, it would have been obvious to a person of ordinary skill in the art to use lock in detection as taught by Walker in the system disclosed by Link et al. as an engineering design choice of a way to effectively detect and recover information from the signal. Again, the claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art.

4. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Levin et al.** (US 4,994,675 A) in view of **Walker**.

Regarding **claim 12**, Levin et al. disclose a method for controlling a laser system in a communications system (Figure 3), comprising:

providing a data signal (i.e., "A to B information signal" shown in Figure 3);

embedding a test signal having a level commensurate with a noise level of the communications system (i.e., "XX Test Signal" shown in Figure 3) in the data signal ("A to B Information Signal")

transmitting the data signal containing the embedded test signal from a first laser transceiver (i.e., the "Point A" transceiver as shown in Figure 3 including transmitter 15 and receiver 33; column 6, lines 11-30; column 7, lines 24-27) to a second laser transceiver using optical path (fiber optic link 17);

receiving the transmitted signal at the second laser transceiver (i.e., the "Point B" transceiver including receiver 18 and transmitter 30);

detecting, recovering and digitally processing the test signal at the second transceiver to determine a laser characteristic of the first laser transceiver (using elements 19, 22, and 23; column 6, lines 36-53);

sending the laser characteristic from the second laser transceiver to the first laser transceiver (using elements 25 and 26; column 6, lines 54-57; column 7, lines 38-45);

receiving the laser characteristic at the first transceiver; and

adjusting the first laser transceiver according to the received laser characteristic (column 7, lines 24-49).

Regarding claim 12, Examiner respectfully notes that Levin et al. disclose a test signal "having a level commensurate with a noise level of the communications system" at least in the sense that the disclosed test signal (i.e., "XX Test Signal" shown in Figure 3) has a level that is very low compared to the level of data signal (column 5, lines 56-58), which would be well

understood in the optical communications art as being similar ("commensurate") to a level that noise in the signal would have.

Further regarding claim 12, Levin et al. disclose extracting the test signal from the acquired modulated optical output signal but do not specifically disclose that the digital signal processing includes a lock in detector or a linear sweep detector algorithm. However, various signal detection algorithms are known in the communications art. In particular, Walker teach a system that is related to the one disclosed by Levin et al., including using a noise-level test signal to control a laser (Figure 6; column 8, lines 28-31), and Walker further teaches using lock in detection (column 8, lines 50-53). Regarding claim 12, it would have been obvious to a person of ordinary skill in the art to use lock in detection as taught by Walker in the system disclosed by Levin et al. as an engineering design choice of a way to effectively detect and recover information from the signal. Again, the claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art.

Allowable Subject Matter

5. **Claims 2-4, 9, and 15** are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, including Link et al., Levin et al., Walker, and Kaaden et al. (US 5,949,606 A, cited in the previous Office action), does not specifically disclose or fairly suggest a system or method including the combination of all the elements, steps, and limitations recited in claims 2-4, 9, and 15, particularly wherein a laser bias current adjustment is determined and applied according to all the limitations recited in claims 2 and 9.

Response to Arguments

7. Applicant's arguments filed 09 July 2008 with respect to claims 1, 10, and 12 have been fully considered but they are not persuasive.

8. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Examiner respectfully notes that the rejections of claims 1, 10, and 12 are based on combinations of Link et al. or Levin et al., in view of Walker. As discussed in detail above, Walker is relied upon to provide a teaching of lock-in detection, while Link et al. and Levin et al. are separately relied upon for disclosures of test signals.

Also, regarding Applicant's assertion on page 9 of the response that Link et al. and Levin et al. do not disclose a test signal as recited in the claims, Examiner respectfully notes that Link et al. and Levin et al. each separately disclose a test signal "having a level commensurate with a noise level of the communications system" at least in the sense that the disclosed test signal (i.e., "pulsed pilot signal" f_{PILOT} disclosed by Link et al. and "XX Test Signal" shown in Figure 3 disclosed by Levin et al.) has a level that is very low compared to the level of data signal (Link et al., column 3, lines 35-38; Levin et al., column 5, lines 56-58), which would be well understood in the optical communications art as being similar ("commensurate") to a level that noise in the signal would have.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung, whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christina Y. Leung/

Primary Examiner, Art Unit 2613